

[0032]

The present invention can be suitably utilized as a probe of, for example, an inspection device.

[Name of Document] What Is Claimed Is

5 [Claim 1] A probe that comes into electrical contact with an object to be inspected when inspecting an electrical characteristic of the object to be inspected, the probe comprising:

a probe main body having a contact portion that comes into contact with the object to be inspected; and a plurality of conductive materials each  
10 having a tip portion projecting from the contact portion of said probe main body.

[Claim 2] The probe according to claim 1,

wherein the contact portion has a contact surface that comes into contact with the object to be inspected.

15 [Claim 3] The probe according to claim 1,

wherein said conductive materials are buried in the contact portion and made of a material harder than the contact portion.

[Claim 4] The probe according to claim 1,

wherein said conductive materials are made of conductive diamond or  
20 nanoscale metal.

[Claim 5] A method of manufacturing a probe that comes into electrical contact with an object to be inspected when inspecting an electrical characteristic of the object to be inspected, the method comprising the steps of:

25 forming, on a substrate, a mold of a contact portion that comes into contact with the object to be inspected; putting in the mold a plurality of

conductive materials having tip portions; forming the contact portion by filling conductive metal in the mold; forming a probe main body including the contact portion; and releasing the contact portion from the mold and making the tip portions of the conductive materials project from the contact portion.

5 [Name of Document] Abstract

In accordance with an increase in speed, a wiring structure has rapidly become more microscopic and thinner and a wiring layer has become extremely thin, and therefore, giving a contact load to a probe for the inspection as has been conventionally done causes damage to a wiring layer  
10 and an insulation layer because the probe penetrates not only the oxide film but also the wiring layer or because of a concentration stress from the probe. On the other hand, decreasing the contact load causes unstable continuity between the probe and an electrode pad.

It is an object of the present invention to surely and stably inspect an  
15 object to be inspected by breaking an oxide film with a low stylus pressure.

The present invention is a probe that comes into electrical contact with an object to be inspected when inspecting an electrical characteristic of the object to be inspected, the probe including: a probe main body having a contact portion that comes into contact with the object to be inspected; and a  
20 plurality of conductive materials having tip portions projecting from the contact portion of the probe main body.

FIG.1A

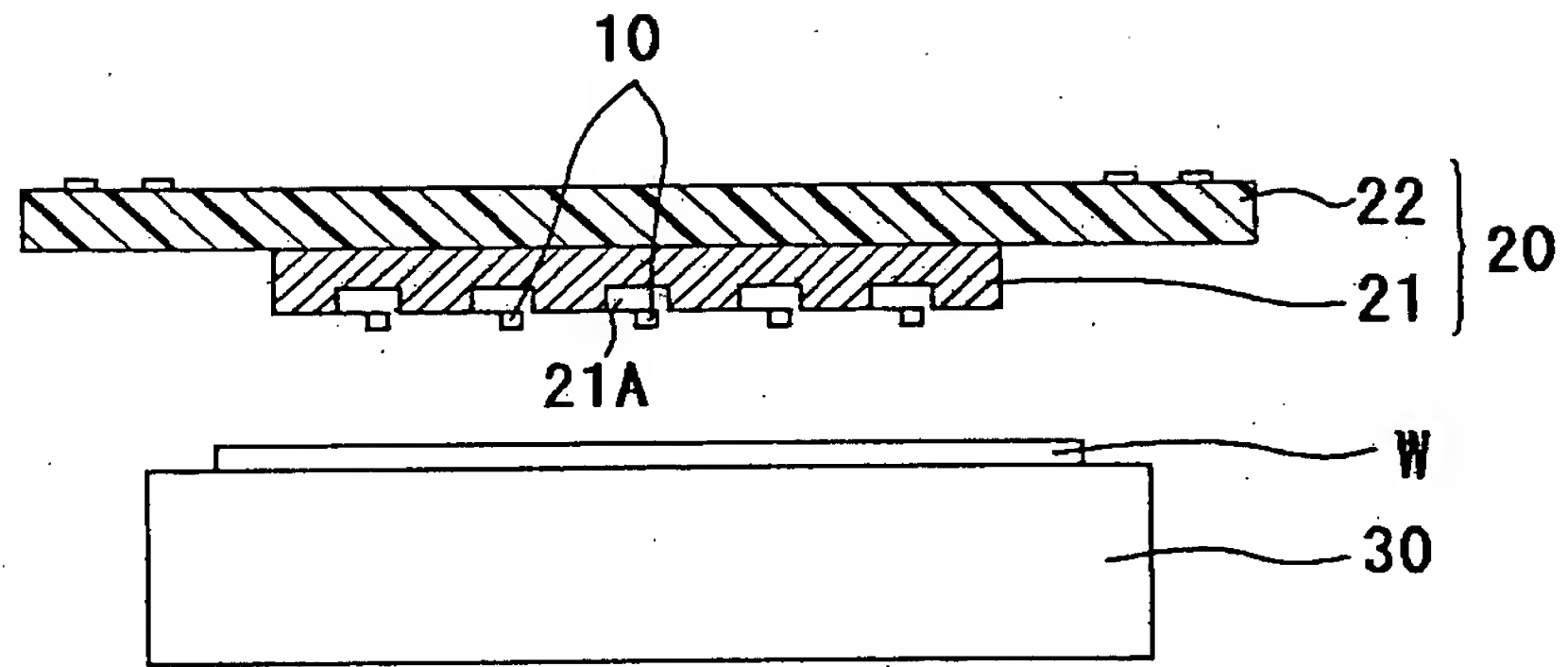


FIG.1B

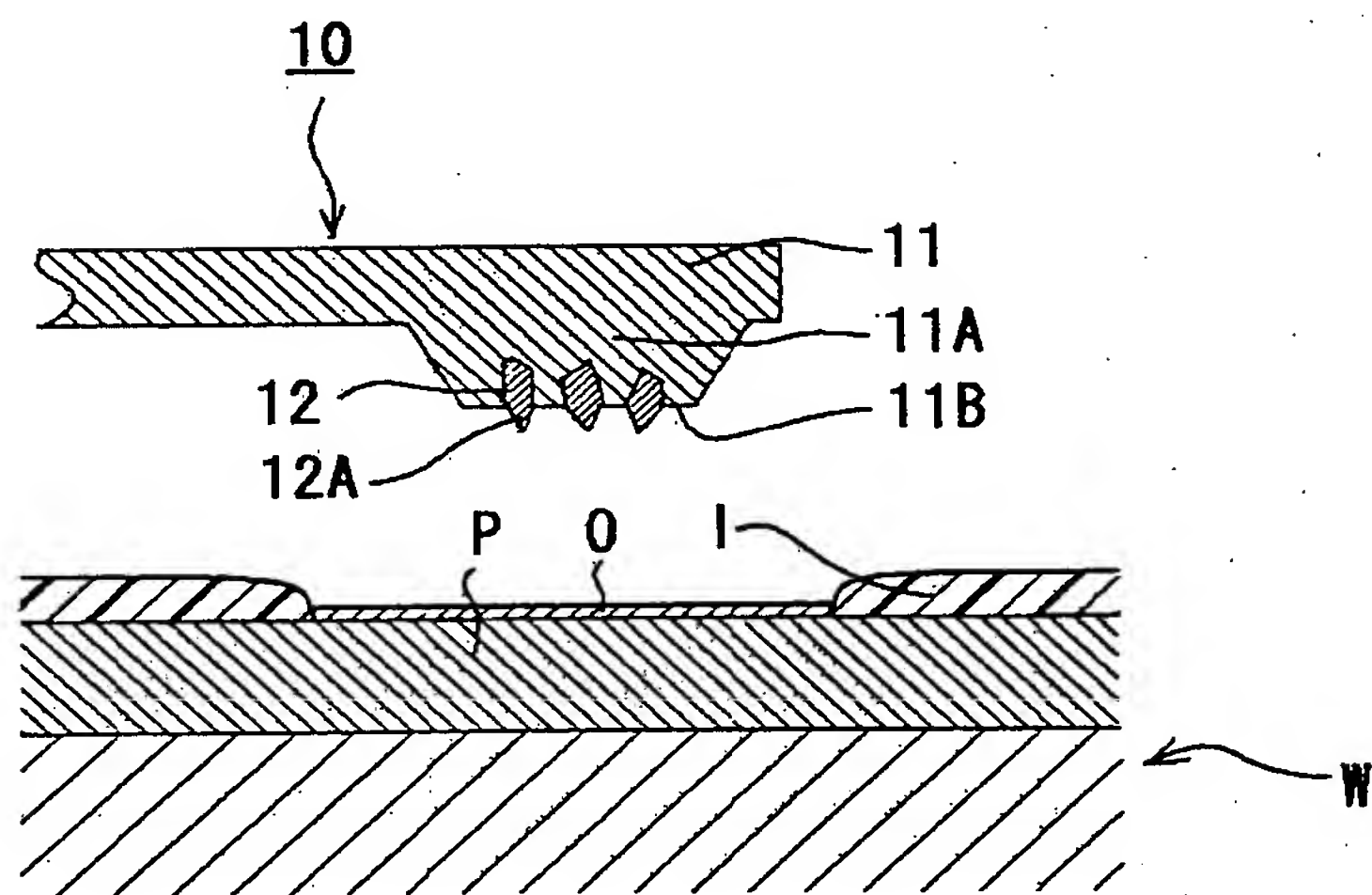


FIG.2

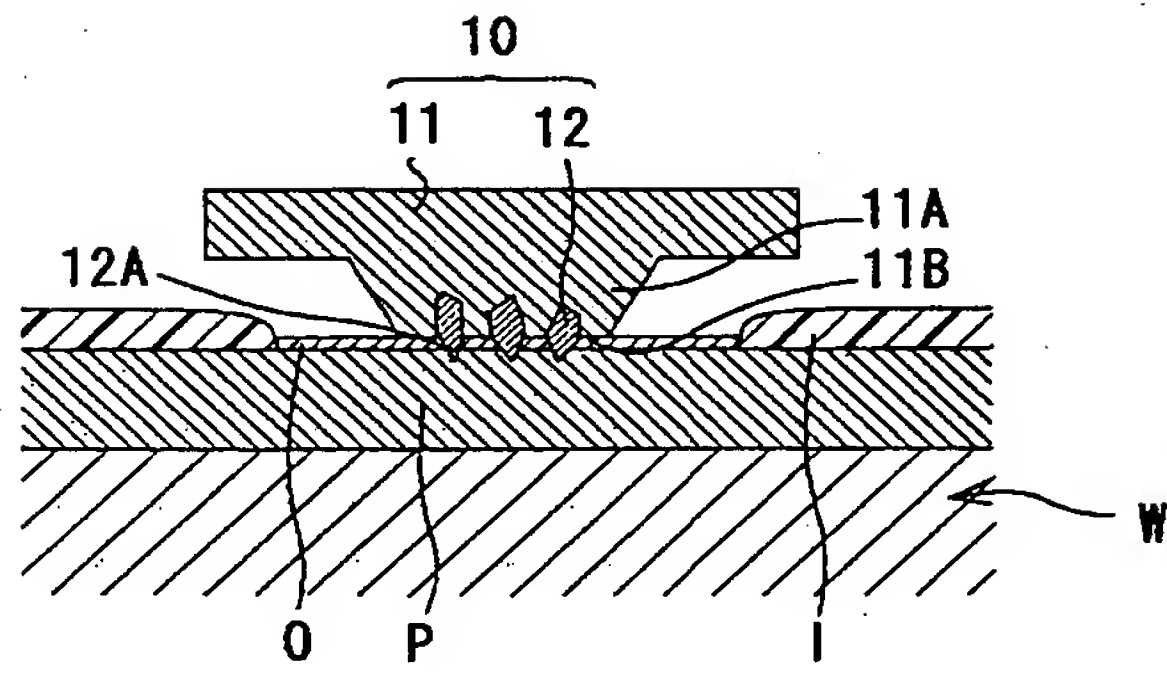


FIG.3A

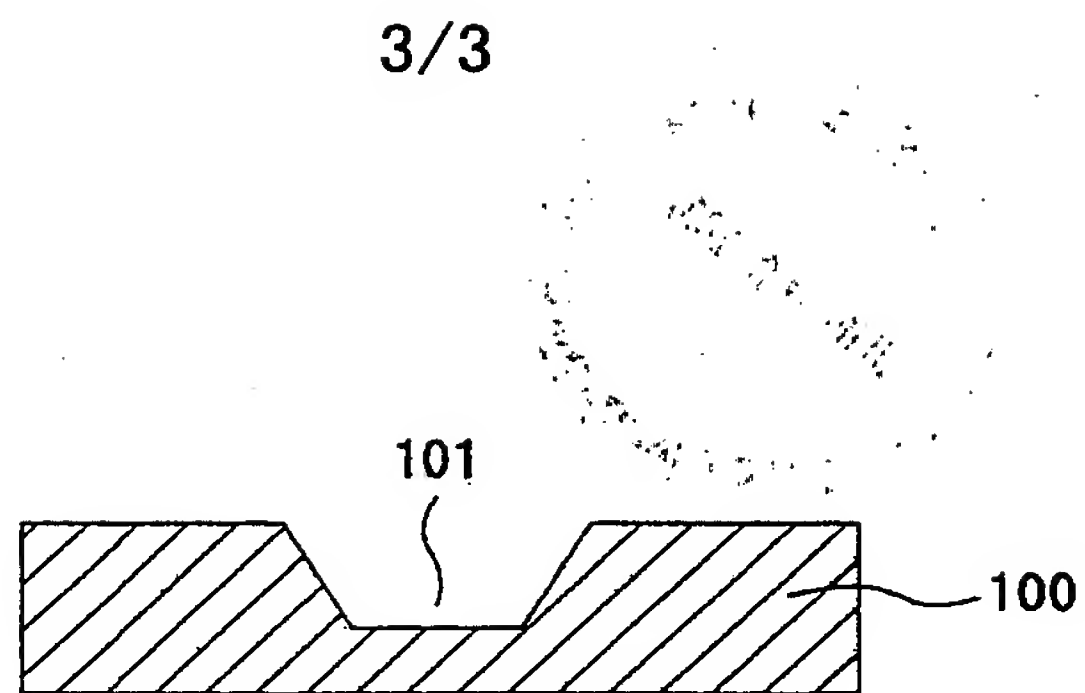


FIG.3B

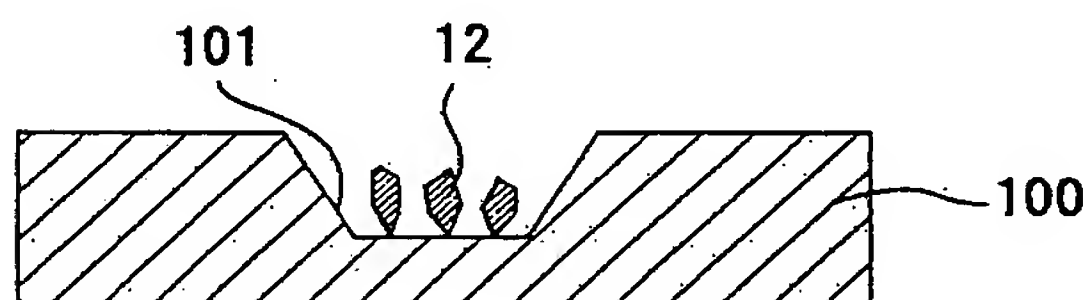


FIG.3C

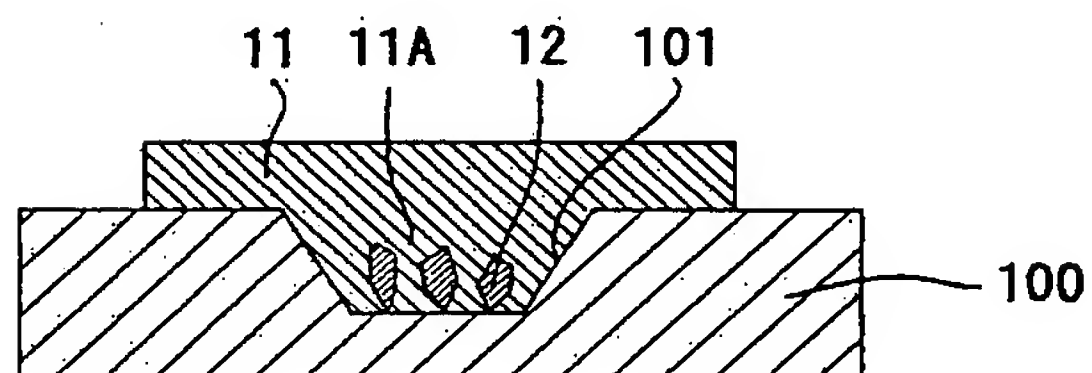


FIG.3D

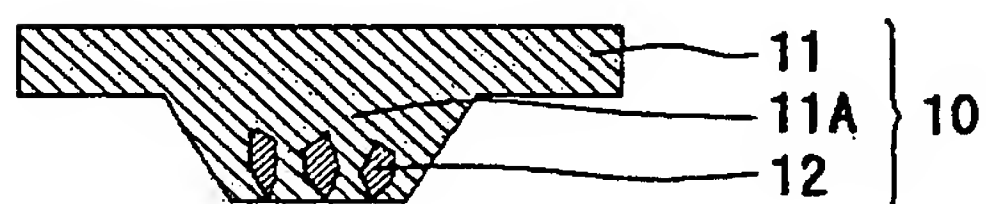


FIG.3E

